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A Training Feedback System for Brigade Command Groups

by

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This document describes a system for analyzing the performance of an Army brigade command group during participation in Computer Assisted Map Maneuver System (CAMMS) exercises and for providing to participants systematic feedback which will stimulate improvement by the command group of its ability to meet Army Training and Evaluation Program (ARTEP)standards.

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FOREWORD

System Development Corporation submits this document to the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) in conformance to contract number DAHC 19-77-C-0018, "Application of Human Factors Research to (1) Develop Training Objectives for Brigade Commanders and Brigade Command Groups and, (2) Optimize the Effectiveness of Command Posts at Division Level." Mr. Steven R. Stewart, ARI Field Unit - Leavenworth, was the Contracting Officer's Technical Representative.

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The work was performed during the period 8 February 1977 - 7 February 1978 by staff members of the Columbus Research Office of HumRRO. Dr. Joseph A. Olmstead was HumRRO Project Director. Mr. Michael J. Baranick and Mr. B. Leon Elder were project members.

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Dr. T. O. Jacobs was ARI Contracting Officer's Technical Representative for this part of the project initially and the work was completed with Mr. Steven R. Stewart in that role.

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TM-5958/000/00, "A Description of an Army Division Manual Tactical Operations Center Organization and Tasks," 12 September 1977.

TM-5958/001/00, "Tactical Organization and Tasks of the Intelligence (S2) and Operations (S3) Elements Within the Tactical Operations Centers of a Brigade and a Battalion," 21 October 1977.

TM-6008/000/00, "Research on Training for Brigade Command Groups: Factors Contributing to Unit Combat Readiness." Final Report, 7 February 1978.

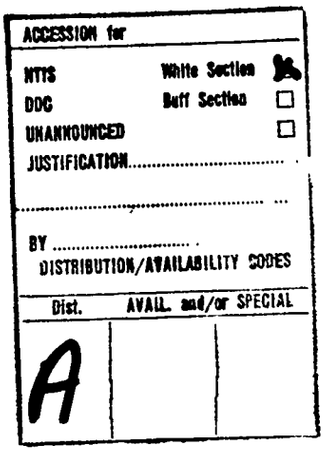
TM-6008/001/00, "Training for Brigade Command Groups: Training Objectives and Strategies," 7 February 1978.

TM-6008/002/00, "A Training Feedback System for Brigade Command Groups," 7 February 1978.

TM-6009/000/00, "Initial Strategies for the Tactical Operations System (TOS) Support of the Command and Control Process. Final Report, Volume I, Overview of TOS Operations," 7 February 1978.

TM-6009/001/00, "Initial Strategies for the Tactical Operations System (TOS) Support of the Command and Control Process. Final Report, Volume 2, Description of TOS Functions for Division Elements," 7 February 1978.

TM-6609/002/00, "Initial Strategies for the Tactical Operations System (TOS) Support of the Command and Control Process. Final Report, Volume 3, Description of TOS Functions at Brigade and Battalion," 7 February 1978.



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A TRAINING FEEDBACK SYSTEM FOR BRIGADE COMMAND GROUPS

INTRODUCTION

This document describes a system for analyzing the performance of a brigade command group during participation in Computer Assisted Map Maneuver System (CAMMS) exercises and for providing to participants systematic feedback which will stimulate improvement by the command group of its ability to meet Army Training and Evaluation Program standards. When used in conjunction with instructions for conducting CAMMS exercises,[1] the guidance provided in this document should enable responsible personnel to effectively administer CAMMS training for brigade command groups.

COMPUTER ASSISTED MAP MANEUVER SYSTEM (CAMMS)

Stated simply, CAMMS is a two-sided battle simulation which makes possible a training situation in which a brigade command group (players) interacts with controllers playing superior unit levels and, through subordinate unit players, with "table controllers" playing lower-level friendly units. Using a control map to depict disposition and movement of forces, friendly table controllers maneuver their units according to player instructions so as to engage in combat with enemy units maneuvered by "threat table controllers." Combat outcomes are determined by a computer which provides rapid calculation and feedback of results of engagements between friendly and threat forces and can provide end-of-exercise summaries of the status of friendly and threat resources. Thus, CAMMS is a flexible, two-sided, free-play simulation which, when properly conducted, provides dynamic and realistic opportunities for brigade command groups to experience and practice required command and control activities.

TRAINING RATIONALE

The purpose of CAMMS is to train military personnel to effectively perform command and control functions. Although planning is included, heavy emphasis is placed upon execution, i.e., upon problem solving, decision making, and implementation of decisions during the course of ongoing combat operations carried out under conditions of rapid change and less than complete certainty concerning enemy intentions, activities, and resources.

The training envisioned to be provided by CAMMS is "experiential" in nature. Learning is expected to occur when participants experience the dynamic interaction between their decisions and actions on the one hand and a reacting combat environment on the other. Thus, participants actually experience themselves functioning in realistic combat situations and also experience the consequences of their decisions and actions. In this way, participants would

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[1] Manual for Computer Assisted Map Maneuver System, Combined Arms Center, Fort Leavenworth, Kansas.

"discover" the implications of various battlefield variables--friendly, enemy, and environmental--for combat effectiveness. Thus, learning would be meaningful, lasting, and relevant.

It is apparent that CAMMS possesses the potential for being a highly effective training device. However, it is also clear that participation in a CAMMS exercise, no matter how dynamic and realistic, is not sufficient alone to maximize the full training potential of CAMMS. In short, not much learning will occur through mere exposure to a CAMMS exercise, and that which does occur is likely to be random, accidental, uncontrolled, and, possibly, erroneous.

On the other hand, CAMMS has the potential for providing highly effective training experiences when realistic participation in the exercises is coupled with carefully designed analysis of command group performance, systematic feedback to participants of performance results, participant analysis of strengths and weaknesses, and planned remedial development. In this way, CAMMS training can be systematic and directed toward training objectives based upon ARTEP requirements.

USE

The guidance provided in this document is designed to assist CAMMS controllers, or other appropriate personnel, to analyze brigade command group performance and provide feedback of the analysis to the command group so that performance capability of the command group can be improved. In order for the training analysis and feedback to be effective, the following conditions must be met:

(1) All regularly assigned members of the brigade command group (commander and principal staff officers) must actively participate in their assigned positions throughout the CAMMS exercise, including the planning phase of the simulated operations.

(2) Superior-unit level controllers should be experienced officers of appropriate level and knowledgeable about the functions and actions of brigade-level command and control personnel.

(3) Once begun, the CAMMS exercise should be carried through to its agreed-in-advance conclusion without artificial readjustments of force dispositions, weapons, equipment, etc.

(4) Resupply should be only that which would be normal and feasible under the circumstances dictated by the exercise scenario.

(5) Threat controllers should be knowledgeable of threat doctrine and should adhere to such doctrine at all times.

(6) No artificial, unusual, or unrealistic variables should be introduced into the exercise.

ANALYSIS OF COMMAND GROUP PERFORMANCE

The analysis of command group performance should be conducted from a training viewpoint rather than for evaluation. That is, the purpose of the analysis is to develop information about strengths and weaknesses which can be reported back to participants so that learning may occur and performance may be improved. Any formal evaluations should be conducted separately from training exercises and with full knowledge of participants that assessment of proficiency is the objective. Figure 1 shows the recommended sequence to be followed in developing and providing training feedback.

OBSERVATION DURING EXERCISE

The analysis will be conducted by superior-unit level controllers (division level controllers) under the direction of the Exercise Director. As they perform their regular controller duties during the exercise, controllers will also observe, from their various perspectives, the activities of the command group and judge the quality of the group's performance of a number of tasks that have been determined to be critical for unit effectiveness. The tasks are derived from the Brigade Command Group ARTEP and, accordingly, are activities for which command group proficiency should be developed.

It is recommended that one individual, not a controller, be designated a TOC Monitor and stationed within the Brigade Tactical Operations Center (TOC) to observe activities and evaluate performance of the brigade command group. The TOC Monitor should be an officer having qualifications and experience equivalent to those required of G2/G3 controllers, i.e., knowledgeable about the functions and actions of brigade-level command and control personnel. Use of a TOC Monitor, who will have no controller duties to distract him and will be actually present in the TOC, will add a valuable perspective to the analysis of command group performance.

A Controller Rating Form appears in Appendix A. This form is to be used by controllers in analyzing command group performance during CAMMS exercises. It contains a brief description of each critical task together with standards for performance of the task. A rating scale is also provided for use by controllers in arriving at quantitative judgments after conclusion of the exercise.

The Controller Rating Form contains 52 items on which brigade command group performance is to be rated. Items 1 through 42 pertain to discrete activities that should be performed by brigade command groups during participation in CAMMS exercises. Each activity is one subtask of draft Brigade Command Group ARTEP 100-1 and the standard associated with the activity is the standard required for satisfactory ARTEP performance. For some items, wording of ARTEP standards were slightly modified for more precise application to CAMMS exercises. On the Controller Rating Form, numbers in parentheses immediately following activity statements are ARTEP subtask numbers.

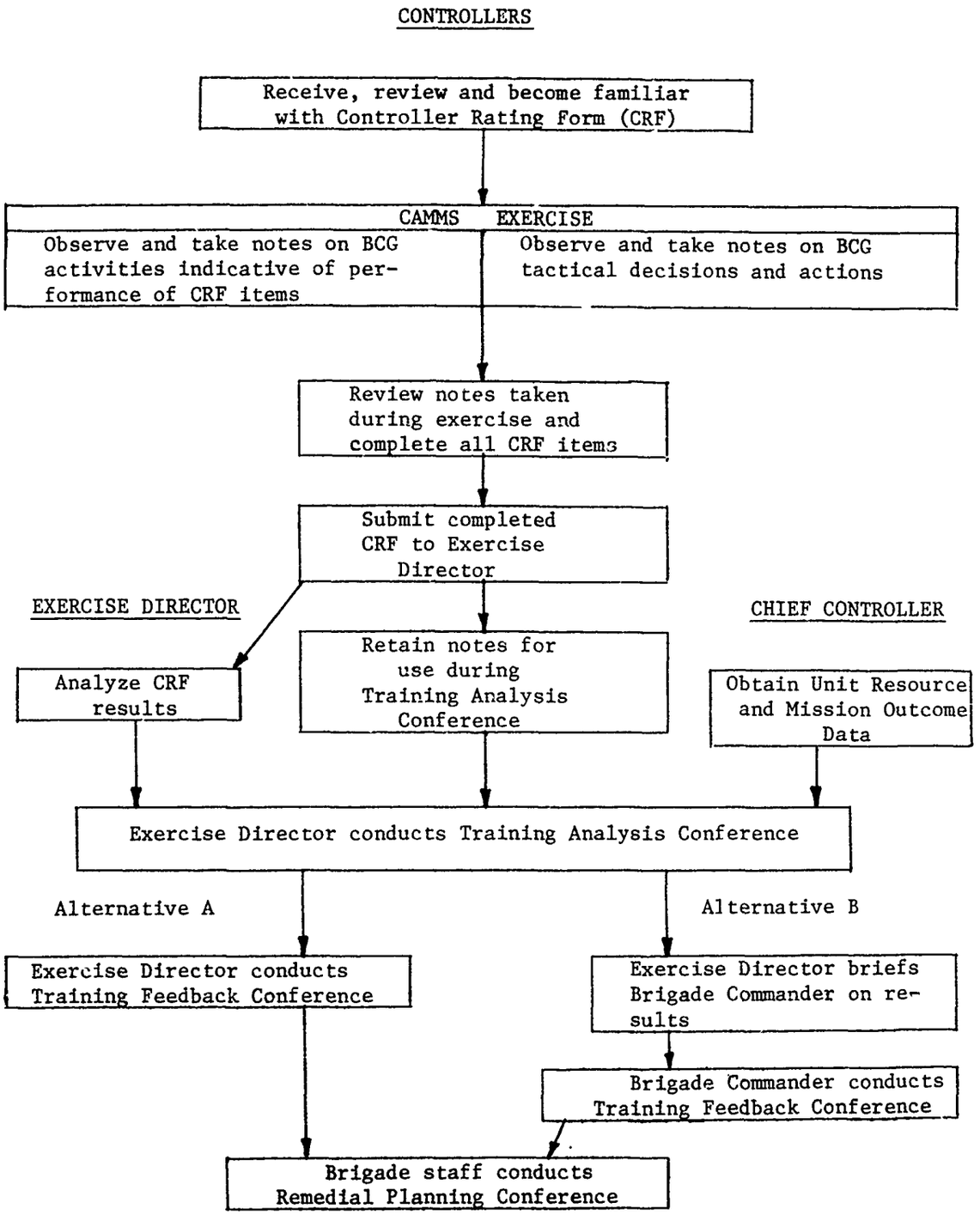

Figure 1

Flow Diagram of Training Feedback System

Nineteen subtasks of ARTEP 100-1 do not appear as items in the Controller Rating Form. For the most part, the omitted subtasks concern activities which cannot be conducted in the simulated environment of CAMMS. Two concern activities which, although possible to simulate in CAMMS, are so complex that they are not usually included in CAMMS scenarios.

Items 43 through 52 of the Controller Rating Form are not ARTEP subtasks. These items cover certain general processes and overall effectiveness evaluations for which data should be valuable for training feedback purposes.

Controllers should familiarize themselves with the Controller Rating Form prior to beginning of the exercise. Then, during the exercise, observations should be particularly oriented toward activities of the command group that pertain to the tasks described on the form. Notes should be made of actions, communications, or other significant events that are especially indicative of command group performance of the various tasks or which impact significantly upon outcomes of the tactical operations. Throughout, controllers should keep in mind that the purpose is to develop information that will be useful to participants for performance improvement. Accordingly, qualitative as well as quantitative results are desired. Wherever possible, the relationships between command group actions and combat events should be noted. The standards which accompany each task description on the Controller Rating Form should be used to evaluate the quality of task performance. Both tasks that are performed equal to or better than standard and those for which improvement is needed should be noted.

A seven point scale is used for rating performance of the tasks. A seven point scale is used, rather than the "Go/No Go" scales normally used in Instructional Systems Development, because the longer scale permits more precise measurement of performance and the finer gradations in scores that result are deemed more desirable for training feedback concerned with complex performance such as that required of brigade command groups. Furthermore, the definitions of the scale points have significant meanings in relation to command group performance, an attribute that is also deemed desirable for training feedback purposes. If it is desired to know how a command group's performance compares to that of other groups, reference comparisons may be made with the average command group scores shown in Appendix B.

Table 1 shows the recommended controller responsibility for observation and completion of the various Controller Rating Form items. Personnel indicated as having responsibility for the items are those who should be in the best position to observe and evaluate performance on the items and, accordingly, these individuals should insure that ratings are made for the items shown as their responsibility. However, ratings should also be made for any other items for which there has been valid opportunity for observation.

Table 1

PERSONNEL RESPONSIBLE FOR COMPLETION OF CONTROLLER RATING FORM ITEMS

Rater	Items to be Rated
Chief Controller	All CRF items.
G1/G4 Controllers	Items 19, 31, 36, 37, 43, 44, 45 46, 48, 51, and 52.
G2/G3 Controllers	All CRF items except 19, 36, 37, 47, 51, and 52.
Fire Controller	Items 20, 21, 22, 23, 31, 33, 34, 43, 44, 45, 46, and 48.
Air Controller	Items 31, 33, 34, 43, 44, 45, 46, and 48.
TOC Monitor	All CRF items except item 21.

POST-EXERCISE ANALYSIS

Prompt feedback of performance information to participating command groups is highly desirable. Accordingly, the post-exercise analysis of performance results should be accomplished as soon as possible after completion of the CAMMS exercise.

Immediately upon conclusion of an exercise, each controller should review his notes and complete the ratings for all Controller Rating Form items according to directions appearing on the form. After completion, ratings should be submitted to the Exercise Director. Notes should be retained by controllers for reference during the Training Analysis Conference to be discussed below.

Unit Profile. The Exercise Director will direct the computation of average scores for each Controller Rating Form item. For each item, sum the ratings of all controllers and divide the sum by the number of controllers. "0" (No Opportunity to Observe) ratings should not be included in the computations. With two people working together, computation of all average ratings should be accomplished within approximately one hour.

The set of average scores constitutes a profile of performance for the participating brigade command group. Use of the profile will permit comparison of scores on the various tasks and identification of relative strengths and weaknesses among performance areas.

Command Group Average Scores. Appendix B presents average scores for eight FORSCOM units, two Reserve units, and one National Guard unit which participated in CAMMS exercises during the period February-October 1977. The averages can be used as rough guides of typical command group performance. Comparison of the unit profile against the averages shown in Appendix B will provide a loose estimate of command group performance relative to that of similar groups which have participated in CAMMS.

CAMMS Combat Results. The flow diagram in Figure 1 shows the responsibility of the Chief Controller to obtain the final CAMMS combat results, i.e., the final locations of units and the remaining resources (personnel, weapons, equipment), and Topics I.A., I.B., I.C., I.D., and I.E. of the Training Analysis Conference, described in the next section of this document, require use of combat results information. Feedback to the player command group of the final outcome of the simulated operation is highly desirable and will provide genuine meaning and significance to the Training Feedback Conference to follow. However, as CAMMS is presently designed, the computation of results concerning resources is an arduous process and may be beyond the capability of some controllers to accomplish expeditiously.

Information concerning mission accomplishment will be relatively simple to acquire. Examination of friendly and threat unit dispositions on the control map at conclusion of the exercise will provide all of the information needed to determine the extent to which the unit accomplished the mission set out in the Division OPORD.

Determination of friendly and threat attrition and computation of an exchange ratio is a more complex undertaking. To obtain data on friendly and threat losses, it will be necessary to obtain computer printouts of final updates for each unit involved in the exercise.[1] Under the present CAMMS program, data can be supplied only for small units, i.e., platoons, sections, etc. Accordingly, it is necessary to obtain a final update for each small unit and sum the results for all small units within each battalion to obtain battalion and brigade summaries. After computing final statuses of brigade resources, subtract the final resources from beginning resources plus any resupply or replacements of personnel that may have occurred. Beginning resources plus resupply and replacement minus final resources gives losses for the exercise. When these computations have been completed for threat and friendly forces separately, comparison of losses for threat and friendly forces provides an "exchange ratio," i.e., the ratio of friendly losses to threat losses. Exchange ratios should be computed for personnel, weapons, and equipment separately.

As stated earlier, under the present CAMMS program, the computation procedure is rather arduous. Accordingly, some Exercise Directors may prefer not to analyze combat results.

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[1] Manual for Computer Assisted Map Maneuver System, Combined Arms Center, Fort Leavenworth, Kansas, pp. 3-20 to 3-21.

Training Analysis Conference. As soon as computation of the Unit Profile has been completed, a Training Analysis Conference should be convened. Purpose of the conference is to summarize performance results and provide the Exercise Director with information needed to conduct a Training Feedback Conference which is designed to convey results of CAMMS performance to command group members. All controllers should attend the Training Analysis Conference.

During the Training Analysis Conference, controllers should review performance of the command group and aggregate the specific information for use in the later feedback conference. As each item is reviewed, participating controllers should provide from their notes concrete examples of command group performance and group judgments of the quality of performance should be developed. Examples and judgments should be recorded for use by the Exercise Director in the feedback conference or his briefing of the Brigade Commander. Throughout, emphasis should be placed upon information that will be useful to the command group in improving future performance.

Following are topics recommended to be reviewed during the Conference:

I. Mission Accomplishment

A. Was the mission accomplished?

B. Evaluation of the time required to accomplish the mission.

C. Comparison of friendly losses to enemy attrition (exchange ratio).

D. End-of-exercise capacity of the brigade to continue the operation (consolidate gains, exploit early success, etc.).

E. Location of unit at end of exercise and area gained or lost in relation to mission objectives and resources expended.

II. Use of Unit Resources

A. Use of organic direct fire--examples of effective and ineffective use of direct fire.

B. Use of organic and inorganic indirect fire support--examples of effective and ineffective use of indirect fire support.

C. Use of other organic and inorganic resources.

III. Tactical Analysis

A. Identify tactical decisions and actions that exerted especially important effects upon the outcome of the battle. Explore possible alternative decisions and actions with probable outcomes.

IV. Command Group Actions

A. Review each task listed on the Controller Rating Form.

1. Identify the Command Group Score (average controller rating).

2. Explore and record reasons for the score--with examples.

B. Compare the Unit Profile against Command Group Average Scores (Appendix B) and identify items of special strength or weakness.

V. Identify Special Points for Emphasis

A. Identify performance areas that warrant special emphasis and discussion.

Upon conclusion of the Conference, the Exercise Director will be equipped to conduct the Training Feedback Conference or to brief the Brigade Commander as desired by the Commander.

TRAINING FEEDBACK CONFERENCE

The Training Feedback Conference should be convened as soon after the Training Analysis Conference as possible and not more than one-half day after the completion of the CAMMS exercise. Two alternatives are proposed for conduct of the conference. For Alternative A, the conference is conducted by the Exercise Director who serves as conference leader and reports the results to the command group. All brigade command group players, the Exercise Director, the Chief Controller, the Chief Board Controller, and all superior-unit level controllers should attend. Attendance of subordinate-unit players and board controllers is optional and should be determined by the desires of the Brigade Commander. Since focus of the Conference will be upon command group decisions and actions, the commander may desire to limit attendance to the command group and those controllers who had direct responsibility for observing the group's performance, i.e., Exercise Director, Chief Controller, and superior-unit level controllers.

In Alternative B, the Exercise Director briefs the Brigade Commander concerning results of the Training Analysis Conference, i.e., the Exercise Director provides feedback to the Brigade Commander. In turn, the Brigade Commander conducts the Training Feedback Conference with only members of the command group present.

For convenience, in the discussion to follow reference will be made to the "conference leader." The conference leader may be either the Exercise Director or the Brigade Commander, depending upon the alternative selected.

PURPOSE OF TRAINING FEEDBACK CONFERENCE

The purpose of the Training Feedback Conference is to assist the brigade command group to identify areas of performance which require improvement and areas in which current performance meets ARTEP standards. It is the responsibility of the command group to accomplish the necessary improvements. It is the responsibility of the conference leader to assist the command group to identify deficient areas and to provide information about CAMMS performance sufficient to enable group members to plan and implement remedial training and action.

Since the purpose of the conference is to contribute to training of the command group, all activities of the conference leader and controllers should be oriented toward enhancing the learning of command group members. Care should be taken to avoid a climate of criticism or official evaluation during the conference.

RECORDING THE PROCEEDINGS

It is recommended that one member of the command group be designated by the commander as a recorder to maintain a Debriefing Log during the conference. Purpose of the log is to provide a record of significant points and decisions, to be used by the command group in later planning of remedial training and actions.

During the conference, the recorder should note briefly all significant points made during feedback of performance results by the conference leader and any conclusions or decisions made by the group concerning possible causes or indicated actions.

FORMAT OF CONFERENCE

The conference should be opened with a statement by the conference leader concerning the purpose. It should be emphasized by the conference leader that no formal evaluation of the command group is involved and that observations were made solely for the purpose of providing feedback to be used by the command group in its efforts to meet ARTEP standards. Emphasize also that much of the material to be reported will address the various ARTEP tasks and, accordingly, will be highly relevant. The conference leader should recommend that, in performance areas where ARTEP standards were not met, the command group consider, in a separate conference, remedial training or actions that should be implemented.

It is recommended that the main body of the Training Feedback Conference follow the same topic outline suggested for the Training Analysis Conference (see above section entitled "Training Analysis Conference"). Review the exercise using the general topics Mission Accomplishment, Use of Unit Resources, and Tactical Analysis. Then, begin the discussion of Command Group Actions. Supply each command group member with a copy of the Controller Rating Form. Discuss each item separately, providing the unit score (average rating) and comparing it to the average for the item. Review the group's performance on the item, citing concrete examples wherever possible. Show

implications for the outcome of the exercise. Encourage the command group to discuss reasons for its performance, alternative ways of handling the cited examples, and general ways of improving performance. It is recommended that decisions about specific remedial training or actions be deferred until a later command group conference devoted to development of remedial plans.

After all items have been discussed, summarize the major points of the conference. Include a summary of major strengths and weaknesses, obvious implications for improvement, and any decisions or conclusions that were made. Recommend that the command group hold a follow-up conference for the purpose of planning remedial training or action.

CONDUCTING THE TRAINING FEEDBACK CONFERENCE

The format described above should produce best results. However, the manner in which performance information is presented and discussed is more important than format of the conference. The atmosphere that is created during the conference will determine, in large part, the amount of learning that can occur.

To establish an atmosphere that will be conducive to learning, the conference leader should use his opening remarks to emphasize that the purpose of the conference is not to evaluate or criticize the command group but, rather, to assist the group by presenting useful information so that systematic efforts can be made to improve performance. Make clear that it was the controllers' responsibility to develop the information but it is the command group's responsibility to use the information for performance improvement.

Each item in the format recommended above should be discussed separately. As each item is covered, full opportunity for command group discussion should be provided at that time. It is not recommended that discussion be withheld until all materal has been presented. The Training Feedback Conference should not take the form of a formal briefing. Rather, it should be a working session devoted to systematic but informal analysis of information.

As discussion of each new item is initiated, the conference leader should read the task description and the standards from the Controller Rating Form. Then, it is recommended that the command group be invited to analyze its performance of the task during the exercise and the reasons for such performance. Group analysis prior to feedback of results should reduce defensiveness among group members and result in greater receptiveness to feedback. Frequently, the group will identify the same performance deficiencies as the controllers and, therefore, it will not be necessary for the conference leader to present them. When identification can be accomplished by members of the command group, defensiveness will be reduced. After group analysis, it will be possible for the conference leader to interject additional feedback not covered by the command group. Finally, the unit score and average score comparisons may be presented and discussed.

Wherever possible, concrete examples of the connection between performance and combat results should be presented. It will not be possible to make such connections in every instance; however, it should be done at every opportunity.

Throughout the conference, greatest benefit can be achieved if the conference leader assumes a teaching role. That is, use questions judiciously to guide the group toward examination of its performance. In this fashion, greater motivation for assimilating and using the feedback information will be developed.

Finally, greater training benefits can be achieved to the extent that the conference leader can guide the command group to accept responsibility for analyzing the results and deriving training implications from them. Where the conference leader can comfortably assume the role of an information provider and catalyst, greatest benefits can be achieved.

REMEDIAL PLANNING CONFERENCE

As stated in a preceding section, it is recommended that the Brigade Commander convene one or a series of conferences to be devoted to further analysis of implications of the CAMMS exercise results and to specific planning of remedial training or actions. Such a conference will serve two purposes. First, it will make it unnecessary to discuss specific training decisions or plans during the Training Feedback Conference, thus permitting all of that conference to be devoted to analysis of results. Second, a separate conference conducted by the commander and limited to unit members will permit the commander and his staff to fully control planning for training within the unit. In this way, control of training remains with the commander.

APPENDIX A

CONTROLLER RATING FORM

CONTROLLER RATING FORM

Instructions

The following pages list a number of critical activities performed by Brigade Command Groups (BCG) during the planning and execution phases of combat operations. For each activity, a standard of performance is also presented. Note that the activities are grouped into two phases--(1) Planning and Organizing Prior to the Engagement and (2) Fighting the Battle.

For each activity, please rate the performance of the Brigade Command Group according to the standards presented. Note that you should rate the performance of the Brigade Command Group only. The activities of Battalion Command Group players should not be a consideration in your ratings.

For each activity, enter in the space provided one of the numbers shown below which best fits your judgment of how well the Brigade Command Group performed relative to the standard. Use the following scale to make your ratings.

Rating		Definition
0	-----	No personal knowledge of command group performance of this activity.
1	-----	Totally Ineffective. Activity was not performed or it included major deficiencies so that it was never completed.
2	-----	The command group's performance included several major deficiencies so that the activity, although completed, was ineffective.
3	-----	The command group's performance included many minor deficiencies so that, overall, the activity was marginal for mission accomplishment.
4	-----	Adequate. Command group performance was minimally adequate for mission accomplishment.
5	-----	Command group performance was better than adequate but included minor deficiencies.
6	-----	The quality of performance somewhat exceeded that required for mission accomplishment.
7	-----	Superior. Command group performance of this activity was complete in all respects and the quality of performance fully exceeded that required for mission accomplishment.

(NOTICE--INFORMATION PROVIDED IN THIS QUESTIONNAIRE WILL NOT BE USED IN ANY WAY TO EVALUATE YOUR UNIT)

PLANNING AND ORGANIZING PRIOR TO ENGAGEMENT

The following activities pertain to the planning and organizing phase prior to beginning of the actual engagement.

Activity	Standard	Comments	Rating
	Planning Prior to the Engagement		
1. Analyze mission. (1A)	BCG identifies the specified/implied tasks required by the Bde and develops a Bde WO/OPORD. This material will indicate recognition of the following elements. 1. Were the command relationships stated? 2. Were all supporting friendly units identified and their missions stated? 3. Was the mission of the Bde stated? 4. Was the concept of the operation stated to (a) include passage of lines, (b) specific objectives for units, and (c) required coordinations?		_____
2. Select/Control key terrain. (1E)	BCG identifies terrain which facilitates accomplishment of the Bde mission, or would facilitate accomplishment of the enemy's mission. 1. Key terrain is identified. 2. Key terrain is controlled by occupation or fires.		_____

Note: The numbers in parenthesis following the activity statements are Draft Brigade ARTEP Subtask numbers.

Activity	Standard	Comments	Rating
	Planning Prior to the Engagement (Cont'd)		
3. Select routes/zones of approach to objective. (1F)	BCG selects avenues of approach which optimize the following considerations. 1. Provide maximum cover and concealment. 2. Minimize effects of obstacles. 3. Permit mutual support and overwatch. 4. Permit effective employment of weapons. 5. Facilitate control while permitting units to deploy and maneuver. 6. Maximize Bde and unit mobility. 7. Capitalize on enemy vulnerabilities. 8. Minimize time for units to close on objective. 9. Facilitate logistical operations.		_____
4. Assign areas and sectors of defense/ battle positions (Defense only). (1G)	BCG assigns areas and sectors/battle positions which: 1. Block most critical avenue of approach into the defensive sector. 2. Minimize vulnerabilities to enemy's frontal direct fire weapons and indirect fire weapons. 3. Maximize capabilities of own weapons and permit engagement of targets at maximum effective range. 4. Exploit and reinforce natural terrain obstacles. 5. Permit mutual support and overwatch. 6. Facilitate control while permitting subordinates to deploy and maneuver. 7. Maximize Bde and Bn mobility by allowing for strong, quick counterattack. 8. Capitalize on enemy vulnerabilities. 9. Reduce vulnerability to air attacks.		_____

Activity	Standard	Comments	Rating
	Planning Prior to the Engagement (Cont'd)		
5. Select covering force positions (Defense only).(1H)	BCG selects initial and successive battle positions which optimize considerations below: 1. Block obvious critical avenues of approach. 2. Force enemy to deploy and concentrate forces repeatedly. 3. Maximize effectiveness of own weapons. 4. Force enemy to travel along exposed approach routes. 5. Use natural terrain/man made obstacles. 6. Use battle positions that facilitate transition to limited attack, defense, or withdrawal.		_____
6. Determine critical place. (3A)	BCG identifies place on battlefield where combat power should be concentrated. 1. Was the weighting of the combat power of the Brigade elements based on the intelligence estimate?		_____
7. Select a course of action. (3B)	Commander selects a course of action from information provided. 1. Did BCG provide accurate information based on intelligence estimates? 2. Did BCG take significant factors into account in developing course of action? 3. Did BCG make specific recommendations as to a course of action?		_____

Activity	Standard	Comments	Rating
	Intelligence Activities Prior to Engagement		
8. Identify critical combat information and intelligence. (1B)	BCG identifies critical information and intelligence listed below: 1. Avenues of approach into defended area. 2. Composition and size of attacking force. 3. Enemy's scheme of maneuver and fire support. 4. Enemy's ability to attack by air. 5. Enemy's EW capability.		_____
9. Identify critical friendly information. (1C)	The BCG identifies the location, status, and situation of: 1. All TF elements. 2. Major adjacent units. 3. The Division reserve. 4. Major supporting forces.		_____
10. Analyze friendly capabilities. (1D)	The BCG will analyze friendly capabilities and submit requests for additional assets from brigade as appropriate. 1. Was the mission analyzed to identify requirements? 2. Were environmental factors identified and their implications determined? 3. Were terrain factors identified and their implications determined? 4. Were the capabilities of friendly forces determined?		_____

Activity	Standard	Comments	Rating
	Intelligence Activities Prior to Engagement (Cont'd)		
11. Identify critical intelligence. (2A)	BCG identifies enemy capabilities and weaknesses to include: 1. Location of enemy forces to include reserve. 2. Determine time/distance factors for enemy units to be reinforced. 3. Determine enemy weaknesses. 4. Identifies/disseminates EEI to higher headquarters, adjacent and lower units.		_____
12. Gather critical information and intelligence. (2B)	BCG determines combat information and intelligence shortfalls and aggressively gathers information from all available/appropriate sources. 1. Were all GSR elements effectively utilized? 2. Were personnel deployed sufficiently to observe the enemy prior to hostilities? 3. Was the TF intelligence collection plan properly prepared, and did it reflect analysis by the Bde S2 of tasking responsibilities?		_____
13. Analyze enemy. (2C)	BCG compares known enemy tactics and doctrine with combat information and intelligence and the result is used to predict enemy intentions. 1. Was an intelligence estimate prepared? 2. Were the probable actions of the enemy discussed?		_____

Activity	Standard	Comments	Rating
	Intelligence Activities Prior to Engagement (Cont'd)		
14. Disseminate critical combat information and intelligence. (2D)	BCG disseminates combat information and intelligence which is event oriented and immediately usable to the recipient. 1. Was relevant information from higher headquarters and adjacent units disseminated to subordinate elements? 2. Were subordinate elements given an estimate of specifically what they would be facing?		_____
	Organizing the Battlefield Prior to Engagement		
15. Organize for combat. (3C)	BCG task organizes the battalions into combined arms task force. 1. Was the task organization precisely stated? 2. Were the missions of all organic maneuver elements given? 3. Were the missions of all attached maneuver elements (if any) given? 4. Was a scheme of maneuver developed?		_____
16. Select control measures. (3D)	BCG selects control measures which support the scheme of maneuver, facilitate fire and movement, and permit rapid changes as the battle develops. 1. Were appropriate control measures defined? 2. Were control measures associated with recognizable terrain? 3. Were sufficient control measures (e.g., CFL) established?		_____

Activity	Standard	Comments	Rating
	Organizing the Battlefield Prior to Engagement (Cont'd)		
17. Develop communication plan. (3F)	A communication plan is developed by BCG based on mission requirements. It provides for COMSEC, specifies alternative means of communication, and insures operation of MIJI plan. 1. Was an alternative frequency given? 2. Were company commanders given instructions on actions to be performed if jamming occurs? 3. Was effective alternate means of communication developed in case of lost communication? 4. Was wire utilized as an effective means of communication?		———
18. Communicate/coordinate plans and orders. (3G)	Orders are issued by BCG, usually orally, so as to allow Bde elements maximum time to go through troop leading procedures. Orders are appropriate, clear, concise, and contain essential information. 1. Was the concept of the operation clear? 2. Did all elements understand what they were to do without extensive questioning? 3. Did the OPORD contain enough information for attached units? 4. Was a timely warning order given? 5. Did the warning order contain all necessary information? 6. Was sufficient time allowed to task force elements for their troop leading procedures?		———

Activity	Standard	Comments	Rating
	Organizing the Battlefield Prior to Engagement (Cont'd)		
19. Provide supplies. (3J)	BCG coordinates with supporting supply elements to insure that adequate supplies are immediately available and capable of being issued to accomplish the mission and any subsequent missions. 1. Did the BCG make specific plans to routinely provide units with ammunition, POL, and other supplies critical to the mission? 2. Were prepositioned ammunition points planned for?		_____
	Planning Fire Support Prior to Engagement		
20. Plan use of organic/attached and nonorganic fires. (1I)	BCG develops fire support plan. Plan provides supporting preplanned fires, fires against targets of opportunity, suppressions, surprise deception, and air defense coverage. 1. Did the plan effectively utilize organic heavy mortars? 2. Did the plan effectively utilize supporting artillery? 3. Was an appropriate target list developed? 4. Was adequate communication maintained with the FOs and appropriate information passed?		_____
21. Determine priority of fires. (1J)	BCG identifies priority of fires to include AD fires. 1. Were FA priority of fires established? 2. Were 4.2 priority of fires established? 3. Were AD priorities established?		_____

	Activity	Standard	Comments	Rating
		Planning Fire Support Prior to Engagement (Cont'd)		
22.	Conduct initial fire support coordination. (1L)	BCG determines fire support/target acquisition assets available: determines fire support coordination measures. 1. Were fire support/target acquisiton assets specifically identified by type and availability? 2. Were specific fire support coordination measures identified?		_____
23.	Continue to plan organic, attached, and nonorganic supporting fires and determine priority. (3E)	BCG updates fire plan. 1. BCG requests information concerning targets that will enable them to accurately update fire support plan.		_____
		FIGHTING THE BATTLE		
		The following activities pertain to the execution phase.		
		Intelligence Activities During the Battle		
24.	Identify critical intelligence. (5A)	BCG continues to develop EEI's. 1. Subordinate units tasked to assist in determining tactical indicators and targets		_____
25.	Gather critical combat information and intelligence. (5B)	BCG identifies combat information and intelligence shortfalls and aggressively gathers information from all available/appropriate sources. 1. Request sources to supply event oriented information on a continuing basis.		_____

Activity	Standard	Comments	Rating
	Intelligence Activities During the Battle (Cont'd)		
26. Analyze enemy. (5C)	BCG compares known enemy tactics and doctrine with the developing situation in order to predict enemy intentions. 1. Reports of enemy activity are continuously collected from units in contact.		_____
27. Disseminate critical combat information and intelligence. (5D)	Combat information and intelligence disseminated by the BCG should be event-oriented and be usable by the recipients. Combat information and intelligence should be accurate and disseminated within a time frame which permits the recipient to react. 1. Was critical combat information and intelligence disseminated to the Bde elements? 2. Was information disseminated to the Bde elements within a time frame which permitted the company commander to react?		_____
	Controlling and Coordinating Combat Operations During the Battle		
28. Modify scheme of maneuver. (6A)	Scheme of maneuver is modified by BCG. 1. Was a specific course of action developed? 2. Did the new course of action emphasize cover, concealment, suppression, and teamwork?		_____

Activity	Standard	Comments	Rating
	Controlling and Coordinating Combat Operations During the Battle (Cont'd)		
29. Coordinate/communicate changes. (6B)	BCG immediately makes essential coordinations. Changes are communicated to Brigade elements. Changes are communicated orally as a frag. order and include changed objectives, control measures, and scheme of maneuver. 1. Did subordinate elements understand what they were to do without excessive questions? 2. Were all subordinate elements informed of changes? 3. Was adequate coordination made with adjacent units (e.g., for passage of lines)?		_____
30. Determine critical place and time. (8A)	BCG identifies where maximum combat power should be employed. 1. Did the BCG read the battlefield and determine enemy's weak points? 2. Were plans immediately developed to exploit the weaknessess?		_____

Activity	Standard	Comments	Rating
	Controlling and Coordinating Combat Operations During the Battle (Cont'd)		
31. Concentrate/shift combat power in the defense/retrograde. (8C)	BCG immediately concentrates its organic/attached/DS assets according to their weapons capabilities and the movement of the enemy force. 1. When the enemy committed itself, did the unit adequately redeploy forces? 2. Did the BCG make adequate use of the Air Force, field artillery, scouts, TOW's, smoke, and CSC? 3. If necessary, were additional units requested from Division reserves? 4. If reinforcements arrived, were they organized for combat and assigned battle positions and missions? 5. Did the BCG make adequate use of attached units such as ADA and Engineers? 6. Did the BCG piecemeal forces? 7. Did the BCG reinforce failure?		_____
32. Protect thinly held areas. (8D)	BCG directs organic/supporting forces to conduct economy of force operations in the thinly-held areas. 1. If required, did the BCG request additional assets to assist?		_____

Activity	Standard	Comments	Rating
	Employing Fires and Fire Support During the Battle		
33. Modify fire support plan. (7A)	Fire support plan is modified by BCG. Essential coordination is made immediately. Changes are communicated by Bde elements. 1. Were requests for immediate fire support received and assigned to appropriate fire support agencies? 2. Did the Bde elements understand the changed plan without excessive questions? 3. Were all Bde elements informed of changes? 4. Was adequate coordination made with adjacent units?		_____
34. Employ fires. (7B)	BCG employs fire support in most efficient manner. 1. Were targets engaged by appropriate weapons? 2. Were targets engaged at maximum range? 3. Were the maximum number of fire support assists concentrated at a critical place and time? 4. Were enemy's fires suppressed? 5. Were the enemy's plans degraded because of BCG's action? 6. Were ammunition expenditures monitored?		_____
	Managing Combat Support Assets During the Battle		
35. Employ other combat support assets. (7C)	BCG tasks supporting combat engineers for appropriate support. 1. Were the engineers used to create obstacles and minefields? 2. Were the engineers used to produce protective shelters? 3. Were the engineers used to maintain tactical and supply routes?		_____

Activity	Standard	Comments	Rating
	Managing Combat Support Assets During the Battle (Cont'd)		
36. Arm and fuel the system. (9A)	The BCG will make decisions that enable the system to be armed and fueled during the battle. 1. Were requests for supplies and equipment handled expeditiously in accordance with SOP? 2. Was delivery to Bde elements made as far forward as prudent? 3. Were time-distance movement requirements considered in resupplying the units?		_____
37. Support the troops. (9C)	BCG manages troop subsistence and movement of replacements to points where they are needed. 1. Did the BCG make special decisions concerning troop subsistence? 2. Did the BCG plan for movement of replacements?		_____
38. Integrate CSS into scheme of maneuver. (9D)	BCG maneuvers CSS elements to best support Bde mission. 1. Were CSS elements kept in close proximity to weapons systems? 2. Were transportation priorities assigned to CSS elements?		_____

Activity	Standard	Comments	Rating
	Securing and Protecting the Task Force During the Battle		
39. Defeat or suppress enemy's electromagnetic intelligence effort. (10A)	BCG stresses that communications and electronic security measures should be rigidly adhered to throughout the Bde. 1. Did apparent security violations occur during radio traffic? 2. Was an abundance of extraneous information discussed that was not required by the tactical situation?		_____
40. Reduce vulnerability to enemy mass reduction weapons system. (10E)	BCG should disperse Bde elements to the extent allowed by the terrain and tactical situation. 1. Were units dispersed where appropriate? 2. Did BCG keep units aware of the dangers of concentration of troops?		_____
	Reacting to Situations Requiring Special Actions During the Battle		
41. React to enemy EW warfare. (12A)	BCG recognizes enemy EW activities and continues operation without revealing effectiveness of activity to enemy. 1. Did BCG recognize that the enemy was employing EW? 2. Did BCG continue operation on an appropriate routine basis? 3. Was a MIJI report submitted to higher HQ using a secure means of communication (if available)? 4. Did the BCG direct a switch to spare frequency as a last resort? If accomplished, were proper authentication techniques employed?		_____

Activity	Standard	Comments	Rating
	Reacting to Situations Requiring Special Actions During the Battle (Cont'd)		
42. React to loss of key member of command group. (12B)	Upon becoming aware of the loss of a key member of the BCG, the BCG will inform higher headquarters and continue to conduct tactical operations. 1. Did the BCG immediately inform Division of the loss? 2. Was the Division asked to supply a replacement? 3. Until the replacement arrived, did a member of BCG assume the duties of the lost personnel?		_____
	OVERALL PERFORMANCE		
43. Planning. (101)	Overall, planning of the BCG is: 1. Complete. 2. Efficient. 3. Covers all contingencies.		_____
44. Decision Making. (102)	Overall, decision making of the BCG is: 1. Timely. 2. Correct in view of the situation.		_____
45. Implementation. (103)	Overall, implementation of decisions is characterized by: 1. General supervision. 2. Delegation of appropriate responsibilities. 3. Timely and appropriate follow-up.		_____

	Activity	Standard	Comments	Rating
		Overall Performance (Cont'd)		
46.	Communication. (104)	Overall, communication of the BCG, both upward and downward, is: 1. Timely. 2. Complete. 3. Accurate. 4. Efficient.		_____
47.	Responsiveness to Subordinate Units. (105)	Overall, the BCG responds to requests and requirements of subordinate units: 1. Promptly. 2. Helpfully. 3. Accurately.		_____
48.	Overall, how effective was this Brigade Command Group? (106)			_____
49.	Overall, how effectively were S3 activities performed? (107)			_____
50.	Overall, how effectively were S2 activities performed? (108)			_____
51.	Overall, how effectively were S1 activities performed? (109)			_____
52.	Overall, how effectively were S4 activities performed? (110)			_____

APPENDIX B

BRIGADE COMMAND GROUP AVERAGE SCORES FOR CAMMS PERFORMANCE

BRIGADE COMMAND GROUP AVERAGE SCORES FOR CAMMS PERFORMANCE

Item	Mean	SD	Range of Normal Deviation[a]	Item	Mean	SD	Range of Normal Deviation[a]
1	5.04	.56	4.48 - 5.60	27	3.83	.44	3.39 - 4.27
2	5.32	.71	4.61 --6.03	28	5.23	.74	4.49 - 5.97
3	5.20	.72	4.48 - 5.92	29	4.68	.62	4.06 - 5.30
4	5.21	.69	4.52 - 5.90	30	4.61	.80	3.81 - 5.41
5	5.27	.75	4.52 - 6.02	31	5.10	.62	4.48 - 5.72
6	4.94	.79	4.15 - 5.73	32	5.25	.94	4.31 - 6.19
7	5.26	.87	4.39 - 6.13	33	4.62	1.48	3.14 - 6.10
8	4.47	.77	3.70 - 5.24	34	5.28	.94	4.34 - 6.22
9	4.86	.64	4.22 - 5.50	35	4.99	.70	4.29 - 5.69
10	5.11	.59	4.52 - 5.70	36	4.45	1.06	3.39 - 5.51
11	4.13	.69	3.44 - 4.82	37	4.58	.99	3.59 - 5.57
12	3.74	.64	3.10 - 4.38	38	4.25	.98	3.27 - 5.23
13	4.50	1.20	3.30 - 5.70	39	4.24	1.13	3.11 - 5.37
14	4.19	.58	3.61 - 4.77	40	4.30	.79	3.51 - 5.09
15	5.50	.69	4.81 - 6.19	41	5.53	2.15	3.38 - 7.68
16	4.86	.92	3.94 - 5.78	42	3.53	2.19	1.34 - 5.72
17	3.89	1.22	2.67 - 5.11	43	4.68	.39	4.29 - 5.07
18	4.84	.68	4.16 - 5.52	44	4.62	.68	3.94 - 5.30
19	4.85	.91	3.94 - 5.76	45	4.51	.50	4.01 - 5.01
20	4.81	1.66	3.15 - 6.47	46	3.89	.54	3.35 - 4.43
21	4.85	1.72	3.13 - 6.57	47	4.23	.66	3.57 - 4.89
22	4.77	1.67	3.10 - 6.44	48	5.04	.47	4.57 - 5.51
23	4.81	1.71	3.10 - 6.52	49	5.35	.82	4.53 - 6.17
24	4.08	.39	3.69 - 4.47	50	4.61	.73	3.88 - 5.34
25	4.01	.65	3.36 - 4.66	51	4.32	.71	3.61 - 5.03
26	4.06	1.16	2.90 - 5.22	52	4.16	.91	3.25 - 5.07

[a]Range of Normal Deviation = $\pm$ One Standard Deviation.
Number of Groups included in Mean is 11.